

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/028735 A1

(51) International Patent Classification⁷: **B23K 26/40**,
26/14, E04G 23/08

(21) International Application Number:
PCT/GB2003/003727

(22) International Filing Date: 29 August 2003 (29.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0222560.5 28 September 2002 (28.09.2002) GB

(71) Applicant (for all designated States except US): **BNFL
(IP) LIMITED** [GB/GB]; Risley, Warrington, Cheshire
WA3 6AS (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CROUSE, Philip-
pus, Lodewyk** [ZA/GB]; c/o Umist, Manufacturing

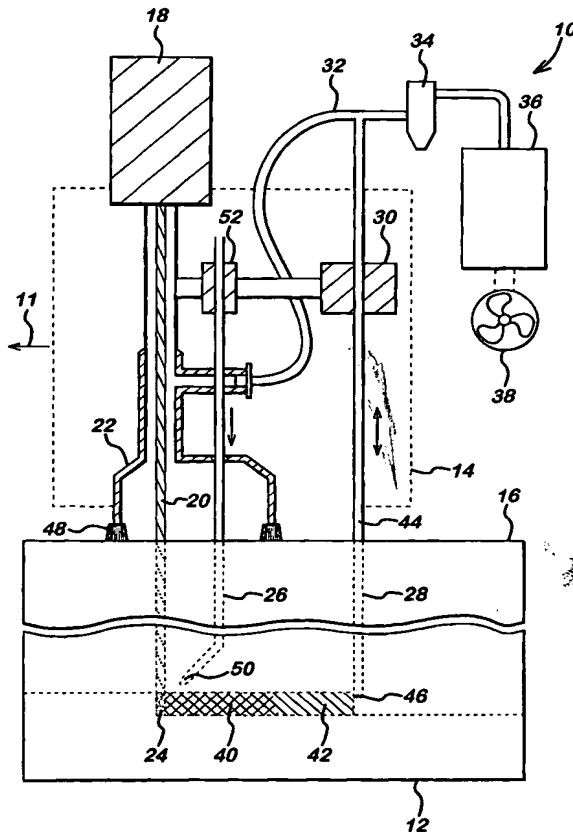
Division, Dept of Mechanical, Aerosp, ace and Man-
ufacturing Engineering, P.O.Box 88, Sackville Street,
Manchester M60 1QD (GB). **LI, Lin** [GB/GB]; Man-
ufacturing Division, Dept. of Mechanical, Aerospace
and Manufacturing Engineering, P.O.Box 88, Sackville
Street, Manchester M60 1QD (GB). **SPENCER, Julian,
Timothy** [GB/GB]; c/o British Nuclear Fuels plc, Research
& Technology, Rutherford House, Risley,, Warrington,
WA3 6AS (GB).

(74) Agents: **GODDARD, David, John** et al.; Harrison God-
dard Foote, Orlando House, 11c Compstall Road, Marple
Bridge, Stockport SK6 5HH (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,

[Continued on next page]

(54) Title: **CUTTING OF CEMENTITIOUS MATERIALS**



(57) Abstract: A method and apparatus for the cutting of thick sections of cement-based materials are described, the method comprising the steps of mutually traversing a surface to be cut with a laser beam at a power density such as to produce a depth of molten material of a maximum of 10 mm at each traverse; allowing said molten material to solidify; breaking said solidified material into particles; and, removing said particles by suction means.

WO 2004/028735 A1



SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.